

DNA & CRIME VICTIMS: WHAT VICTIMS NEED TO KNOW



THE NATIONAL CENTER FOR
Victims of Crime

DNA & CRIME VICTIMS: What Victims Need to Know

The increasing use of DNA evidence in criminal cases gives victims of crime new hope that offenders will be brought to justice. This brochure outlines the process of DNA collection for victims and its potential impact on their cases.

Basic Science of DNA

DNA (deoxyribonucleic acid) is present in all cells in the human body except red blood cells, and works like an instruction manual for our bodies. DNA is what determines our individual physical characteristics such as eye, hair, and skin color.

Ninety-nine percent of all human DNA is exactly alike. The other one percent is used in DNA testing because it is different from person to person, except in identical twins who share the same DNA. This one percent of unique DNA is what makes DNA so useful in criminal investigations.

Sources of DNA Evidence

DNA evidence is found in biological material such as blood, saliva, sweat, urine, skin tissue, and semen. DNA could potentially be found on a victim's body (including under fingernails), clothing, cigarette butts, drinking glasses, furniture, weapons, and ropes or any other item used to bind a victim. Anything a perpetrator touches could potentially have DNA evidence on it.

DNA Evidence Collection

DNA evidence is usually collected at a crime scene by trained investigators who make sure that evidence is not damaged. The first law enforcement officer to arrive on the scene is responsible for protecting potential evidence from contamination until investigators arrive.

DNA evidence collected at a crime scene may be contaminated if it comes into contact with another person's DNA. Additionally, DNA can be damaged by heat, humidity, bacteria, and other environmental conditions. That's why it is so important to correctly collect, transport, and store any evidence that may contain DNA.

DNA evidence collection in sexual assault cases is often performed at a hospital or other healthcare facility by a trained professional known as a sexual assault nurse examiner (SANE) or a sexual assault forensic examiner (SAFE). If no SANE or SAFE is available, another medical professional will perform the exam and collect the evidence. Collecting evidence usually does not hurt. The professional who does the evidence collection may take small samples of some tissue, hair, or bodily fluids from you. (See page 8 for more information on DNA collection in sexual assault cases.)

Reference or Elimination Samples

In addition to collecting evidence from the crime scene, law enforcement officers take what is known as "reference" or "elimination" samples. These samples are from anyone who was known to have been at the crime scene (e.g., the victim, responding officer, family member, or witness). Reference samples are compared with DNA evidence found at the crime scene that is from an unknown source. If the reference samples and

the DNA sample from the unknown source do not match, it means the DNA may have been left at the crime scene by the person who committed the crime.

In sexual assault investigations, authorities may ask for a reference sample from anyone the victim had consensual sex with in the previous 72 hours. A DNA sample is also taken from the victim of the assault or rape so that laboratory personnel can separate the victim's DNA from the offender's DNA.

Chain of Custody

Chain of custody refers to the process of documenting how evidence is collected, analyzed, stored, and protected from its initial collection at the crime scene all the way to its introduction as evidence before a court of law. Each person who handles the evidence must keep a detailed record of what he or she did with it and the precautions used to prevent its contamination. This documentation is very important when the case goes to court. The chain of custody shows that the evidence was handled carefully and has not been damaged or changed in any way.

DNA Profiles

DNA profiles, which are developed by crime labs using DNA evidence provided by law enforcement agencies, contain a certain set of identifiers, or characteristics, that are found at specific points—called loci—on a DNA strand. Information from 13 of these loci makes up a DNA profile. DNA profiles appear as a series of numbers and do not reveal a person's physical traits such as race, age, or medical condition. Much like fingerprints, DNA profiles are used in criminal investigations to identify individuals who might be involved in a particular crime.

Law enforcement officials compare DNA profiles collected from crime scenes to DNA profiles of suspects to see if they match. They can also compare unknown profiles (DNA from unidentified sources collected from a crime scene) to DNA profiles of convicted offenders by using the Federal Bureau of Investigation's (FBI) nationwide DNA database system known as CODIS (the Combined DNA Index System).

CODIS

The Combined DNA Index System, or CODIS, is a powerful tool that forensic scientists use to provide criminal investigators with leads and other information to help them solve crimes.

CODIS is a system of federal, state, and local databases that contains DNA profiles from known criminal offenders (and arrestees, where applicable) and DNA evidence from crime scenes. Crime labs in all 50 states can enter DNA profiles from evidence found at crime scenes into CODIS. They then search for matches between DNA profiles from crimes under investigation and the DNA profiles in the database from previous crimes.

CODIS can also match DNA collected from separate crime scenes, helping to identify serial offenders, and DNA profiles of unidentified human remains to DNA profiles from missing persons or close family members.

Each record in CODIS contains information about the DNA lab that entered the profile, a number to identify the DNA specimen, and the DNA profile itself. Other than the DNA profile, CODIS does not contain any identifying information, such as names, dates of birth, Social Security numbers, or any other personal identifier. CODIS has strict rules that protect individual privacy.

Victims' DNA profiles and other reference samples are not entered into CODIS.

Test Results

If DNA evidence matches the DNA profile of a suspect, it shows, with high likelihood, that the suspect was at the scene of the crime. A DNA match alone, however, does not prove that a suspect committed the crime. If the DNA does not match the suspect, it means that the suspect did not leave the DNA that was found on the evidence, but it does not necessarily mean that a suspect is innocent. In any case, DNA is only part of an investigation. Most crimes are, in fact, prosecuted without DNA evidence. Even when there is a DNA match, other evidence is generally needed to prove the case (despite the impression given by some television programs).

It is also important to remember that DNA testing can produce inconclusive results, such as when a DNA sample becomes contaminated.

Cold Case "Hits"

Thanks to increasingly sophisticated DNA technology, law enforcement is able to solve more and more cold cases. A case may be considered "cold" when investigators are unable to identify any suspects and have no further leads to investigate. Current testing methods now allow law enforcement to create DNA profiles from evidence samples that were once considered too old, small, or degraded. This progress, and the proven success of CODIS, has led law enforcement agencies across the country to look at evidence in many cold cases to see if there is DNA

present that can now be tested and analyzed for a match.

A Victim's Perspective. While DNA technology clearly benefits the criminal justice process, crime victims may experience mixed reactions to the news of a "hit," or DNA match, and the reopening of the investigation. Some victims are pleased that their case has new leads and has been reopened. If reopening the investigation leads to the arrest of the offender, some victims may feel safer than before. Victims may want a case to proceed but still experience painful emotions and unexpected reactions. They may feel unprepared, cautious, hesitant, or even unwilling to reengage with the criminal justice system. Some victims may also fear unwanted media attention or retaliation by the offender.

In any case, victims should be aware that even if DNA testing does identify a suspect, law enforcement may not be able to locate the suspect to arrest him or her, or the legal time limit for pressing charges (called the "statute of limitations") may have passed.

Some victims may need additional support to get through what may be a particularly stressful experience. Victim advocates from police departments, prosecutor's offices, rape crisis centers, and other community-based victim service organizations can help. Victims may also call the **National Crime Victim Helpline** at **1-800-FYI-CALL** for additional assistance.

Post-Conviction Offender Testing

Advancements in DNA technology have also allowed convicted offenders to request new DNA testing to attempt to prove their innocence. In some situations, DNA samples that were thought too small or degraded

for testing at the time of the trial can now be analyzed. In others, new DNA evidence becomes available. The decision to order “post-conviction testing” is either made by a judge or is agreed upon by a prosecutor and defense attorney.

A Victim’s Perspective. Law enforcement authorities might not contact victims right away about a post-conviction test. If the test confirms the defendant’s guilt and the offender remains in prison, victims may never have to be bothered or concerned about the process. Victims will usually be notified when the results of a post-conviction test raise questions about the defendant’s guilt. The defendant may receive a new trial, or the conviction may be overturned.

If the past verdict is changed and the individual previously convicted for the crime is released from prison, victims may fear that the wrongfully convicted person may try to punish or hurt them in some way for their participation in the court case. Victims may also be fearful when they realize that the real offender remains free. Victims may be disappointed that the criminal justice system failed to punish the real offender. If a victim had previously identified the wrongfully convicted person as the offender in the crime, they may experience feelings of guilt or feel responsible for the person’s conviction. Some victims remain confident that the person who is released is the real offender in their crime, and feel anger, fear, or outrage at the person’s release from prison.

Support for victims experiencing these reactions is available from victim advocates in prosecutor’s offices, rape crisis centers, and other community-based victim

service organizations, and through the **National Crime Victim Helpline** at **1-800-FYI-CALL**.

DNA Evidence: Sexual Assault Cases

Preserving evidence. Preserving DNA evidence can be very important in sexual assault cases, especially those in which the offender is a stranger. Victims should make every effort to save anything that might contain the perpetrator’s DNA. Sexual assault victims should not bathe or shower, use the restroom, change clothes, comb their hair, clean up the area where the crime occurred, or move or handle anything the offender may have touched. Even if a victim has not yet decided to report the crime to the police, keeping evidence safe from damage will improve the chances it can be tested at a later date.

Sexual assault exam. Sexual assault forensic exams, sometimes called “rape kit” exams, are best performed in a sterile healthcare setting (e.g., hospital or specialized sexual assault treatment center) by a professional who has been specially trained in evidence collection and the needs of sexual assault victims. Forensic exams are ideally performed by a trained medical professional called a Sexual Assault Nurse Examiner (SANE) or a Sexual Assault Forensic Examiner (SAFE). If a SANE or SAFE is not available, another medical professional will conduct the exam. The medical forensic exam could consist of collecting evidence, photographing and treating injuries, and testing for pregnancy and sexually transmitted diseases (STDs). Medications to prevent sexually transmitted diseases and pregnancy and protect against HIV transmission may also be offered.

DNA evidence in a sexual assault case.

DNA evidence can be key to identifying the perpetrator in a sexual assault case—when the perpetrator is a stranger. It is used both to prove that a sexual act occurred and to show that the defendant is the source of biological material left on the victim's body. DNA evidence is not as useful in cases in which the perpetrator and victim know each other. In these cases, a defendant may not deny that sexual activity occurred, but will often argue that the victim consented to the activity. Documentation of injuries may be particularly important in these cases. (For more information on sexual assault, visit www.ncvc.org/victims.)

CODIS + Mito: Missing Persons & Homicide Cases

CODIS + mito is the FBI's missing persons database, which is used to compare DNA profiles from missing persons or relatives of missing persons to DNA profiles of unidentified human remains.

When a person is missing and feared dead, a family member of the missing person can give a reference sample of DNA to be entered into the database. The family member's DNA profile can then be searched against DNA profiles obtained from unidentified remains.

A direct reference sample can be obtained from a personal item unique to the missing person, such as a baby tooth, razor, toothbrush, or hair brush from which DNA could be extracted. A reference sample from a parent is often needed to verify the identity of a direct reference sample.

Family reference samples are DNA samples from a close relative obtained by a simple, noninvasive

cheek swab. A maternal relative such as the biological mother is the most useful family reference sample, as mitochondrial DNA passes through the maternal line. Additional samples from the biological father and brothers and sisters are also beneficial for making identifications.

Analysis of human remains. DNA can be extracted from bone and tissue, making identification of badly decomposed or skeletal remains possible. Mitochondrial DNA testing is often the method of choice when human remains are old or degraded, because mitochondrial DNA is less susceptible to damage from environmental conditions than nuclear DNA.

Law enforcement agencies across the country are beginning to recognize the potential of the CODIS + mito database in resolving missing persons and homicide cases, and are increasingly sending DNA samples from unidentified remains for testing.

THE NATIONAL CENTER FOR
Victims of Crime

Helping Victims of Crime Rebuild Their Lives

NATIONAL CRIME VICTIM HELPLINE

1-800-FYI-CALL

TTY: 1-800-211-7996

gethelp@ncvc.org

Monday - Friday

8:30 a.m. - 8:30 p.m. ET

www.ncvc.org

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